

REMARKS

This is a full and timely response to the outstanding non-final Office Action mailed July 28, 2005. Through this response, Applicants have canceled claims 1-10, 12-22, and 24-28, and have added new claims 29-55. Reconsideration and allowance of the application and pending claims 29-55 are respectfully requested.

I. Claim Rejections - 35 U.S.C. § 102(e)

Claim 28 has been rejected under 35 U.S.C. § 102(e) as being anticipated by *Nash* ("*Nash*," U.S. Pat. No. 6,317,589 B1). Through this response, Applicants have canceled claim 28. Thus, Applicants respectfully submit that the rejection to claim 28 has been rendered moot.

II. Claim Rejections - 35 U.S.C. § 103(a)

Claims 1-7, 9-10, 12 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Havens et al.* ("*Havens*," U.S. Pat. No. 6,313,680 B1) in view of *Nash*. Claims 13-22 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Havens* in view of *Nash*. Claims 25-27 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Baker et al.* ("*Baker*," U.S. Pat. No. 6,606,483 B1) in view of *Procter, Jr. et al.* ("*Procter*," U.S. Pat. No. 5,929,704) and further in view of *Havens*. Claims 13-22 have been rejected under 35 U.S.C. § 103(b) as allegedly anticipated by or, in the alternative, under 35 U.S.C. 103(a) as allegedly obvious over *Havens*. Applicants have canceled claims 1-28, and thus respectfully submit that these rejections are rendered moot.

III. Canceled Claims

As identified above, claims 1-10, 12-22, and 24-28 have been canceled from the application through this Response without prejudice, waiver, or disclaimer. Applicants reserve the right to present these canceled claims, or variants thereof, in continuing applications to be filed subsequently.

IV. Newly Added Claims

As identified above, claims 29-55 have been added into the application through this response. Applicants respectfully submit that these new claims describe embodiments of an invention novel and unobvious in view of the prior art of record, and therefore, respectfully request that these claims be held to be allowable. Applicants address the independent claims in light of the art of record below.

Independent Claim 29

Claim 29 recites (with emphasis added):

29. A polyphase filter, comprising:
- a first phase splitting filter comprising a first RC network, the first phase splitting filter configured to provide a first output;
 - a second phase splitting filter comprising a second RC network, the second phase splitting filter configured to provide a second output;
 - a first variable resistance separate from the first RC network, the first variable resistance connected across the first output;* and
 - circuitry capable of detecting the phase of the outputs produced by the first and second outputs, and *circuitry capable of adjusting the first variable resistance to produce a desired phase difference between the first output and the second output.*

Applicants respectfully submit that none of the cited references, alone or in combination, discloses, teaches, or suggests at least the emphasized claim features. Thus, Applicants respectfully submit that independent claim 29 and dependent claims 30-40 are in condition for allowance.

Independent Claim 41

Claim 41 recites (with emphasis added):

41. A polyphase filter, comprising:
- a first phase splitting filter that produces a first output, the first phase splitting filter comprising a first RC network;
 - a second phase splitting filter that produces a second output, the second phase splitting filter comprising a second RC network;
 - a first variable resistance connected across the first output and a second variable resistance connected across the second output, the first variable resistance separate from the first RC network and the second variable resistance separate from the second RC network; and*
 - a detector that determines the phase of the first and second outputs, and adjusts the first variable resistance and the second variable resistance to produce a desired phase difference between the first output and the second output.*

Applicants respectfully submit that none of the cited references, alone or in combination, discloses, teaches, or suggests at least the emphasized claim features. Thus, Applicants respectfully submit that independent claim 41 and dependent claims 42-51 are in condition for allowance.

Independent Claim 52

Claim 52 recites (with emphasis added):

52. A communication system, comprising:
- a transmitter and a receiver, the transmitter comprising an input, an analog-to-digital converter, a digital signal processor, a digital-to-analog converter and an RF signal generator, the transmitter modulating an RF carrier with a signal provided to the transmitter input and transmitting the modulated RF carrier, the receiver comprising an RF input, a local oscillator, a polyphase filter connected to an output of the local oscillator, the polyphase filter producing first and second outputs from the local oscillator output, a mixer that combines the RF input with the first and second outputs of the polyphase filter, baseband circuitry, an analog-

to-digital converter, and a digital signal processor that demodulates an output of the analog-to-digital converter, and produces a demodulated output,
the polyphase filter including:
a first phase splitting filter comprising a first RC network, the first phase splitting filter configured to provide a first output;
a second phase splitting filter comprising a second RC network, the second phase splitting filter configured to provide a second output;
a first variable resistance separate from the first RC network, the first variable resistance connected across the first output; and
circuitry capable of detecting the phase of the outputs produced by the first and second outputs, and ***circuitry capable of adjusting the first variable resistance to produce a desired phase difference between the first output and the second output.***

Applicants respectfully submit that none of the cited references, alone or in combination, discloses, teaches, or suggests at least the emphasized claim features. Thus, Applicants respectfully submit that independent claim 52 and dependent claims 53-54 are in condition for allowance.

Independent Claim 55

Claim 55 recites (with emphasis added):

55. A method for obtaining accurate quadrature separation of phase components on a radio frequency carrier that can be mapped on an I-Q plane, comprising:
generating a fixed local oscillator frequency;
splitting the local oscillator frequency into two signals having a predetermined phase difference to produce a first output and a second output;
mixing the first output and the second output with a radio frequency test signal to generate an I baseband signal and a Q baseband signal;
detecting the phase difference between the I baseband signal and the Q baseband signal; and
adjusting the phase difference of the first output and the second output to produce a desired phase difference between the I baseband signal and the Q baseband signal.

Applicants respectfully submit that none of the cited references, alone or in combination, discloses, teaches, or suggests at least the emphasized claim features. Thus, Applicants respectfully submit that independent claim 52 is in condition for allowance.

CONCLUSION

Applicants respectfully submit that Applicants' pending claims are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. Any other statements in the Office Action that are not explicitly addressed herein are not intended to be admitted. In addition, any and all findings of inherency are traversed as not having been shown to be necessarily present. Furthermore, any and all findings of well-known art and official notice, and similarly interpreted statements, should not be considered well known since the Office Action does not include specific factual findings predicated on sound technical and scientific reasoning to support such conclusions. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (770) 933-9500.

Respectfully submitted,



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